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A Place for Communication [Editor's Column]

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Editor's Column

by Peter Palensky

A Place for Communication

IEEE Industrial Electronics Magazine (IEM) is hungry for inspiring, seminal articles that present and explain the latest advances in the field of interest to the membership of the IEEE Industrial Electronics Society (IES). Typically, we choose experienced, senior experts—or teams of experts—to write such articles, but sometimes we also select talented young authors. *IEM* is selective, but if you keep an eye on triggering industrial interest, which is fundamental for the IES community, you will have a better chance of getting published. I am scouting journals and conferences for talented writers, so please approach me if you believe you are destined to produce content that is enlightening, inspiring, entertaining, or provocative. The magazine is a platform for communication within our community and to others. Use it!

As an editor, I naturally try to monitor the success and the acceptance of our publications. Among the instruments used toward that goal are the various journal-ranking indices. Professionals know that one index alone does not convey much information, and only a portfolio of very orthogonal and diverse indices can give a reliable impression of the popularity and the impact of a publication. Some of the more famous indices are presented in Clarivate Analytics annual "Journal Citation Reports," which is typically published annually in June. This year's report showed—again—very encouraging figures for *IEM*. For instance, the journal impact factor (JIF) grew to 13.241, ranking second among all IEEE publications. We receive a very large number of citations for the limited amount of feature articles we publish per year, which is part of the explanation for the JIF increase. Our authors are largely responsible for this success by virtue of their hard work in writing articles that explain complex mechanisms in ways that can be easily understood and transformed into innovation. I also thank the exceptional team of *IEM* associate editors. They manage the arduous process of reviewing the submitted articles to ensure that the best are published. Without our reviewers, our level of success would be possible. I extend many thanks to them, especially those who deliver quality reviews with good advice and remarks on how to improve the articles.

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In This Issue

The usage and components of the future energy system are the topics of our main feature articles in this issue. In the first feature article, "Statistical Model Checking for Finite-Set Model Predictive Control Converters," Mateja Novak et al. explain a method proven in the automotive, communications, and other sectors: statistical model checking, by which converters can be checked against stochastic operational conditions. Grid conditions, such as loading or renewable generation, are inherently stochastic and, therefore, lead to complex and tedious test requirements or standards. Using this innovative method, we can assess the limits and performance of power electronic converters in such stochastic situations.

"Reinforcement Learning for Hybrid and Plug-In Hybrid Electric Vehicle Energy Management," by Xiaosong Hu et al., combines one of the current hot research topics—deep learning—with one of the most exciting application areas of industrial electronics—electric mobility. The authors explain how smart on-board energy management can improve efficiency and thus extend the range and enhance the environmental benefits of plug-in hybrid vehicles. Several reinforcement learning algorithms are analyzed and checked for applicability, advantages, and disadvantages in electric vehicle energy management. I hope this article inspires many other professionals working in this field.

The final article covers the reliability of another promising technology for enhancing our power system components. In "An Enhanced Model for Reliability Prediction of a Supercapacitor's Lifetime," Blaž Radej and Gaber Begeš discuss how environmental and operational parameters, such as voltage or temperature, affect forecasts of the life expectancy of supercapacitors. Supercapacitors will, together with other types of storage, play an important role in power systems with less and less inertia. As most other components in the power system have a long lifespan, it is important to understand the life expectancy of all new technologies as well.